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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,985	11/30/2000	Ian M. Williams	SGI 15-4-838.00	6290

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EXAMINER

GOOD JOHNSON, MOTILEWA

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 08/28/2003

60

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/727,985

Applicant(s)

WILLIAMS, IAN M.

Examiner

Motilewa A. Good-Johnson

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-25 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 13-19 is/are rejected.
- 7) ☒ Claim(s) 8-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to the following communications: Application, filed on 11/30/2000; IDS, paper #7, filed on 04/15/2002; Amendment A, filed 06/12/2003.

This action is made non-final.

2. Claims 1-25 are pending in this application. Claims 1, 13 and 20 are pending in this application. Claims 1 and 13 have been amended.
3. The present title of this application is "Texture Generating Apparatus for Dynamic Interference Checking" (as originally filed).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato, U.S. Patent Number 6,452,604 B1, "Interference Checking Apparatus and Method for Checking Interference of Objects in Computer", class 6345/619, 09/17/2002, filed 03/17/1999, in view of Quandranti et al., U.S. Patent Number 6,594,391 B1, "Method and Apparatus for Texture Analysis and Replicability Determination", class 382/203, 07/15/2003, filed 09/03/1999.

As per independent claim 1, a texture generating apparatus, configured in a CAD adapted computer graphic system, adapted to provide proximity analysis of objects . . . comprising: a processing portion adapted to perform calculations of the proximity analysis; (Sato discloses interference checking, i.e. proximity analysis, apparatus which checks the interference state of a plurality of objects generated on a computer, col. 2, lines 55-65, and further disclose the interference check by a CAD system, col. 5, lines 15-21); a texture coordinates generator portion coupled to said texture generating apparatus adapted to provide coordinates . . . ; and a rendering portion coupled to said texture generating apparatus adapted to provide renderability of the texture . . .

However, it is noted that Sato fails to disclose a texture coordinate generator to provide coordinates relating the texture and a rendering portion to provide generality of the texture. Quandranti discloses interactive CAD design in which texture analysis and classification is used to determine the texture replicability, col. 3, lines 29-40. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the interference checking of Sato checking for texture replicability as disclosed in Quandranti, because texture mapping is an essential part of computer graphics applications and a CAD system is a computer graphics application.

With respect to dependent claim 2, processing portion is adapted to operate independently of, but in conjunction with, the CAD adapted computer graphic system. (Sato discloses the interference checking apparatus downloads a model prepared by a CAD system, col. 6, lines 15-25)

With respect to dependent claim 3, objects in a design comprise a first object and a second object. (Sato discloses checking the interference state between a plurality of objects on a computer, col. 2, lines 64-65)

With respect to dependent claims 4-6, the first object is a component of a design and the second object is a defined plane. (Sato discloses interference point having the component and clipping plane, col. 13, lines 29-44)

With respect to dependent claim 7, the texture generator is adapted to access a proximity value characterizing a spatial relationship between objects in a design. However, it is noted that Sato fails to disclose texture generator adapted to access a proximity value. Quandranti discloses texture analysis and classification for replicability and classifies based upon regularity and directionality, col. 3, lines 29-40. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the interference checking of Sato checking for texture replicability as disclosed in Quandranti, because texture mapping is an essential part of computer graphics applications and a CAD system is a computer graphics application.

As per independent claim 13, it is rejected based upon similar rational as above independent claim 1.

With respect to dependent claims 14 and 15, texture of said texture based proximity analysis is user definable; user scaleable. However, it is noted that Sato fails to disclose texture generator adapted to access a proximity value. Quandranti discloses texture analysis and classification for replicability and classifies based upon regularity and directionality, col. 3, lines 29-40, and further discloses user-supplied input to

Art Unit: 2672

produce a desirable output, col. 10, lines 1-10. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the interference checking of Sato checking for texture replicability as disclosed in Quandranti, because texture mapping is an essential part of computer graphics applications and a CAD system is a computer graphics application.

With respect to dependent claim 16, first object is comprising a component of a design, said component of a design relative to said second object. (Sato discloses an interference point inside an assembly model of a component of a model, col. 13, lines 45-52)

With respect to dependent claim 17, second object comprises a defined plane . . . any of the six orthogonal planes relative to the first object. (Sato discloses coordinate values of the XYZ plane in min and max axes, col. 10, lines 23-53)

With respect to dependent claim 18, plane comprising any of the six orthogonal planes defined as a boundary with regard to the second object. (Sato discloses coordinate values of the XYZ plane in min and max axes, col. 10, lines 23-53)

With respect to dependent claim 19, second object comprises a component of a design; said component of a design is relative to said first object. (Sato discloses an interference point inside an assembly model of a component of a model, col. 13, lines 45-52)

Allowable Subject Matter


6. Claims 8-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 20-25 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.


Motilewa A. Good-Johnson
Examiner
Art Unit 2672

Application/Control Number: 09/727,985

Page 7

Art Unit: 2672

mgj

August 22, 2003